

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): A chiral nematic liquid crystal optical element, comprising:

a pair of substrates with transparent electrodes; and
a liquid crystal layer having a memory property interposed between the substrates;
a first resin layer which is provided on one of the transparent electrodes,
said first resin layer having a rubbed vertical alignment surface in contact with the liquid crystal layer;

~~a non-alignment layer of a second resin layer~~ which is a resin layer selected from the group consisting of a surface layer which has not been subjected to an alignment treatment by rubbing, a vertical alignment layer of a second resin layer or a horizontal alignment layer of a second resin layer which is, said second resin layer being provided between the liquid crystal layer and the other of the transparent electrodes;

wherein said liquid crystal layer exhibits a planar state and a focal conic state;
wherein the second resin layer has a surface hardness of B or less in a pencil hardness test.

Claim 2 (Original): The liquid crystal optical element according to Claim 1, wherein the first resin layer is provided only on the substrate on a side opposite to an observing side.

Claims 3-4 (Canceled):

Claim 5 (Currently Amended): A chiral nematic liquid crystal optical element, comprising:

- a pair of substrates with transparent electrodes; and
- a liquid crystal layer having a memory property interposed between the substrates;
- a metal-oxide layer provided on at least one of the transparent electrodes;
- a first resin layer which is provided on one of the transparent electrodes, said first resin layer having a rubbed vertical alignment surface in contact with the liquid crystal layer;
- ~~a non-alignment layer of a second resin layer~~ which is a resin layer selected from the group consisting of a surface layer which has not been subjected to an alignment treatment by rubbing, a vertical alignment layer of a second resin layer or a horizontal alignment layer of a second resin layer which is, said second resin layer being provided between the liquid crystal layer and the other of the transparent electrodes;
- wherein said liquid crystal layer exhibits a planar state and a focal conic state;
- wherein the second resin layer has a surface hardness of B or less in terms of a pencil hardness test.

Claim 6 (Original): The liquid crystal optical element according to Claim 5, wherein the paired transparent electrodes have a drive voltage of 20V or less applied thereacross.

Claims 7-10 (Canceled):

Claim 11 (Previously Presented) The liquid crystal optical element according to Claim 1, wherein said focal conic state produces a scattering of incident light.

Claim 12 (Previously Presented) The liquid crystal optical element according to Claim 1, wherein said planar state produces a selective reflection of incident light.

Claim 13 (Previously Presented) The liquid crystal optical element according to Claim 1, which is a color display.

Claim 14 (Previously Presented) The liquid crystal optical element according to Claim 1, wherein said second resin layer comprises a polyimide which has been baked.

Claim 15 (Previously Presented) The liquid crystal optical element according to Claim 1, further comprising

a first electrically insulating layer which is coated on at least one of the electrodes and a second electrically insulating layer which is coated on the other electrode; and wherein said first and said second resin layer are coated on said electrically insulating layer.

Claim 16 (Currently Amended) The liquid crystal optical element according to Claim 1, wherein said second resin layer is ~~a non-alignment layer of a resin surface~~ a surface layer which has not been subjected to an alignment treatment by rubbing.

Claim 17 (Previously Presented) The liquid crystal optical element according to Claim 1, wherein said second resin layer prevents image-sticking.

Claim 18 (Previously Presented) The liquid crystal optical element according to Claim 1, wherein the liquid crystal layer exhibits reflection characteristics as if the liquid crystal layer is a mirror.

Claim 19 (Previously Presented) The liquid crystal optical element according to Claim 5, wherein said second resin layer comprises a polyimide which has been baked.

Claim 20 (Previously Presented) The liquid crystal optical element according to Claim 5, further comprising

a first electrically insulating layer which is coated on at least one of the electrodes and a second electrically insulating layer which is coated on the other electrode; and

wherein said first and said second resin layer are coated on said electrically insulating layer.

Claim 21 (Currently Amended) The liquid crystal optical element according to Claim 5, wherein said second resin layer is ~~a non-alignment layer of a resin surface~~ a surface layer which has not been subjected to an alignment treatment by rubbing.

Claim 22 (Previously Presented) The liquid crystal optical element according to Claim 5, wherein said second resin layer prevents image-sticking.

Claim 23 (Previously Presented) The liquid crystal optical element according to Claim 5, wherein the liquid crystal layer exhibits reflection characteristics as if the liquid crystal layer is a mirror.

Claims 24-26 (Canceled)

Claim 27 (Previously Presented): The liquid crystal optical element according to Claim 1, wherein said rubbed vertical alignment surface does not twist the liquid crystal at 240°.

Claim 28 (Previously Presented): The liquid crystal optical element according to Claim 5, wherein said rubbed vertical alignment surface does not twist the liquid crystal at 240°.

Claim 29 (New): The liquid crystal optical element according to Claim 1, wherein said second resin layer consists of a resin.

Claim 30 (New): The liquid crystal optical element according to Claim 5, wherein said second resin layer consists of a resin.

BASIS FOR THE AMENDMENT

Claims 1, 5, 16 and 21 have been amended as supported at page 27, lines 12-15 and at page 18, lines 13-15, of the specification.

New Claims 29 and 30 have been added as supported by Claims 1 and 5.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 1, 2, 5, 6, 11-23 and 27-30 will now be active in this application.